

THE UNIVERSITY OF CHICAGO

None.

Background - Field of Invention:

This invention relates to the process of recruiting new employees, specifically harvesting email addresses belonging to potential viable candidates from sites and postings searched for and found on the Internet and sending specifically related help wanted advertisements via electronic mail to those addresses then receiving, filtering, sorting and distributing the response.

Background - Description of Prior Art

Classified help wanted advertising in print, television and radio media as well as postings of help wanted advertisements on Internet web sites are a common practice. Such mediums for prospecting employment candidates are passive in the context of the candidate seeker's objectives. They require the reaction of a potential job seeker who must be reading a specific periodical, watching or listening to a specific broadcast or visiting a specific internet web site or requested a specific push technology internet broadcast. There are too many job opportunity broadcasts and sites available for any job seeker to peruse even a minor percentage on a timely basis. A candidate seeker could attempt to advertise through every applicable site and medium in order to reach every potential candidate however such a strategy is impractical if not impossible. Even if it were

practical or possible the candidate seeker would not reach viable candidates who are not actively searching job opportunity advertising sites. The United States Federal Government predicts demand for technical labor in such areas as information technology, sciences, biotechnology and engineering to exceed supply by as much as fifteen percent by the year 2002. In such a situation competitive employers require more aggressive means to prospect employment candidate than the prior mentioned passive methodologies.

Bulk electronic mailing is a common process used to broadcast messages to groups of email addresses collected in databases however the processes used prior to Candidate Chaser are static and the targeting is dependent on pre-assembled databases of email addresses. In such cases where email address lists are procured from a database sources mailers are subject to limited accuracy on two categories: first, are the addresses still active, second, are the individuals interested in receiving email related to the mailers' offerings. Furthermore, the present state of electronic mail address databases does not permit the targeting of addresses based on the individual owner's experiences, interests, capabilities, professional titles or talents.

While bulk electronic mailing is unquestionably legal, there is a powerful lobby opposing general broadcasts of large untargeted and unsolicited bulk electronic mailings which consume huge amounts of internet communication bandwidth causing system delays, increased cost without benefit and mail server failures. Such mailings are broadcast to high quantities, 50,000 - 200,000 addresses at a time, in the hopes that a fraction, perhaps one tenth of a percent will reach a viable and interested audience. Most of the bandwidth consumption would not be necessary if a more targeted approach was used.

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Employers spend over a billion dollars every year in the United States on employment agency fees, classified advertising costs, recruiting staff, the design of recruitment programs and software and referral bonus programs. Many of those employers are large companies that have invested tremendous development resources into solving their recruiting problems and cost reduction yet not a single one of them has created an automated recruiting system like the Candidate Chaser machine and process patented herein. The articles attached and labeled as Prior Art Documents # 27, 34, 35, 36, 37, 38, 39, 40, 41 and 42 indicate a recruiting industry searching for internet solutions to recruiting difficulties yet none suggest a solution similar to that presented by the Candidate Chaser machine and process supporting the position of unobviousness relating to the Candidate Chaser machine and process.

Most workers would like to be informed of employment opportunities with quality of life improving advantages including but not limited to compensation increases, advanced training, enhanced benefits, more challenge, diversity and improved career path provided notices of such opportunities were made at the workers' convenience and that workers are not overwhelmed with non-applicable job offerings. Employment agencies and headhunters serve such a purpose but they are prohibitively expensive. No automated and more cost effective alternative was available until the herein described Candidate Chaser was invented.

Present job opportunity advertising systems take days and weeks to reach potential candidates.

While my research indicates no present use of bulk electronic mail for targeted help wanted advertising, use of available bulk email systems would result in "bad address" responses from servers, remove responses, and revenge "flames" from anti-spammers burdening and crashing the advertisers' incoming electronic mail system.

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A search of the IBM Patent Server at <http://patent.womplex.ibm.com> looking for the following words individually in the "abstract" field: recruit, recruiting, hire, hiring, job, candidate, classified, position, bulk, addresses, and recruitment turned up no relevant matching or related patents. A search on the same database for the phrase "electronic mail" turned up no apparently related patents except those patenting the process of sending and receiving electronic mail itself. The patent information and abstract which appear most closely related are attached and labeled as: Prior Art Document #28 Patent 5245532, Prior Art Document #29 Patent 5040141, Prior Art Document #30 Patent 5632018, Prior Art Document #31 Patent 5408334, Prior Art Document # 32 Patent 5487100, and Prior Art Document #33 Patent 5613108.

A search for articles and publications discussing "recruiting on the Internet" turned up two hundred forty nine separate documents. While discussing the use of electronic mail for the circulation of resumes and discussion of job possibilities, no reference is ever made to any recruiting solution that even remotely resembles the Candidate Chaser machine and process. I believe this supports the unobviousness of the Candidate Chaser machine as a solution to recruiting difficulties.

✓ Those article^s which best represent present art on the subject of "recruiting on the Internet" are attached and labeled as Prior Art Documents # 27, 34, 35, 36, 37, 38, 39, 40, 41 and 42.

There are a good number of commercially available computer software programs which can perform certain functions of the Candidate Chaser machine. However, none of them alone or in obvious combination accomplish the task of the Candidate Chaser. The said commercially available computer software programs are described in the attached Prior Art Documents #1, 2, 3, 4, 5, 6, 7, 18, 19, 20, 21, and 22.

1 Objects and Advantages

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The Candidate Chaser machine automatically locates Internet site pages and web postings which contain operator specified keywords or Boolean combinations and then extracts all email addresses from those
5- pages as well as linked pages to as many linking levels as selected by the operator and then sends a job opportunity description enclosed in an electronic mail message to each of the extracted addresses then receives responses from recipients of the job opportunity message then filters those messages by reading their text and forwards only
10 desirable responses to the candidate seeking client's electronic mail address thusly sparing the client interaction with large amounts of irrelevant response while presenting viable candidates for a given job opening.

The Candidate Chaser machine operator inputs keywords then commands
15 the Candidate Chaser machine to interact with the infinite number of interface possibilities available on the Internet. The operator is not required ^{to} conduct or observe the cumbersome, tedious, frustrating and agonizingly slow task of reviewing data contained on Internet web sites, newsgroup postings and other data sources that may exist from
20 time to time on the net. Once started the Candidate Chaser machine conducts the Internet search without operator intervention.

The Candidate Chaser process does not use a static database as its source of addresses but instead takes advantage of the dynamic properties of the Internet where new information is added every
25 minute somewhere on the planet. Candidate Chaser does this by reading internet sites online and extracting email addresses as they appear on targeted sites, postings and broadcasts just prior to broadcasting
28 a job opportunity advertisement

The customized harvesting of email addresses focused on the specific needs of each job opportunity advertisement individually results in relatively low quantities of advertisements broadcast. And much less broadcast bandwidth waste due to non-applicable recipients.

[illegible]

Responses to electronically mailed advertisements are automatically processed through software filters: protecting job opportunity advertisers from "flames", storing removal committed addresses into a universal database, and sorting qualified responses to the appropriate hiring authorities email box.

[illegible][illegible]

The Candidate Chaser machine hardware description herein is for illustration purposes only. It should be noted that the number of general purpose computer processors and the method for interfacing them, for example KVM's (Keyboard, Video, Mouse switch) used, may vary depending on the required capacity and improvements in hardware available. Factors that would affect required capacity include but are not limited to the number of outgoing mailings projected on a daily basis, the size of the address collection lists to which the messages will be directed, the frequency of mailings and the number of responses expected.

The first Candidate Chaser unit constructed and described herein was assembled from single general purpose computers installed with the Windows95 Operating System.

The Candidate Chaser machine presently in operation consists of ten general purpose computers manufactured by the Compaq computer company each equipped with a 150mhz pentium processors by Intel, 24 megabytes of ram, a 1.4 gigabyte hard-drives and 28.8k internal modem. The

Specialized cabling connects the computers to the KVM switches and the KVM switches to the monitors, mice, and keyboards. The RJ11 modem ports are connected by cable to ten separate telephone trunk lines installed by the telephone company on the walls of the facility where the Candidate Chaser machine is operated.

Attached to the front of the Candidate Chaser machine is a platform that is approximately 36 inches by 12 inches providing a flat surface on which the two keyboards and two mice can rest. The platform is attached to a swivel mechanism so the keyboard height may be adjusted for the comfort of the Candidate Chaser machine and process operator.

Chaser 101 is used to receive mail forwarded from chaser 110. Chaser 110 forwards certain pieces of received mail to chaser 101 so that a program installed on chaser 101 can extract the address from the any received message then store the address in a text file so that it may be imported at another time into a file labeled the "remove file" that is referred to later in the process. Chaser 101 is programmed to use an Internet connection to a mail server so it may download electronic mail messages sent to said server by chaser 110. A software computer program called "Replyman" manufactured by ExtractorPro (see Prior Art Document #7) is installed on chaser 101 and serves the purpose to extract the addresses from the downloaded messages and store them into a text file. It is not required that the software "Replyman" be used to execute this process. A programmer experienced in this technology could write a simple program to perform this task using any of an assortment of language compilers such as C, Basic, Assembler, or Cobol.

Chaser 102 is configured to establish a connection with a server providing smtp access for the purpose of delivering electronic mail. A software program called "ExtractorPro Mailer" is installed for the purpose of importing data from text files created by the other chaser harvesting units which are installed on chaser 103, 104, 105, 106, 107, 108, 109. Chaser 102 is equipped with the mailing program so that it may import the addresses from the text files, provide for the compilation of a job opportunity advertising message, a subject and a from field. The software also completes the broadcast of the message to all the extracted addresses through a smtp channel or multiple smtp channels over the Internet. In addition to ExtractorPro mailing

Chaser units 103, 104, 105, 106, 107, 108, and 109 are installed with computer program software called "WebWeasel" which is described in the attached Prior Art Document #7. Based on operator commands, the WebWeasel software executes a search of the Internet seeking web sites that contain the keywords entered by the Candidate Chaser Machine and Process operator and then download the text of the discovered web sites into the memory of the general purpose computer and then compare the text of the web site to an algorithm that recognizes a combination of characters which represent an electronic mail address and then store the electronic mail addresses into a database or text list for export to the mailing broadcast computer software at a later stage in the process. The Candidate Chaser Machine must be installed with computer software program that will enable it to search for web sites containing operator entered keywords and extract electronic mail addresses from the discovered web sites. It is not necessary for a Candidate Chaser Machine to be equipped with "WebWeasel" computer software. There are other computer software programs available including but not limited to: Sonic, Web Collector, and Net Contact which are described in the Prior Art Documents attached to this application.

Operation and Process Description Figure 1 and Figure 2

The typical Candidate Chaser machine consists of one or more general purpose computers equipped with microprocessor, ram, hard disk drive, a communication interface that links the computer(s) to the Internet, one or more keyboards and mouse interface, one or more monitors, and software to be described later. If one monitor is used with multiple computers then a KVM keyboard mouse monitor switch box is employed so operator may switch monitor and keyboard interfaces between computers.

The general purpose computers are physically connected to a network router that can consist of simple analog modems connected to simple telephone lines or more complex digital routing methods but in all cases access to the Internet is necessary.

Installed commercially available "offline browsing" computer software enables the operator to instruct the machine to locate websites and postings, accessed via the internet, which contain operator specified keywords or Boolean combinations and then to download and store the address of the located matching websites and postings into memory. The address is in the format of the URL (Universal Resource Locator) or other address indicator protocols used on the Internet. The machine immediately or at another time downloads the text from the files at the addresses which were located and stored in memory.

The keywords and Boolean combinations entered into the machine should be closely related to the experiences, interests, capabilities, professional titles or talents desired in applicable job candidates.

Once the text of a site or posting is downloaded the machine searches the text of the downloaded file for character strings representative of electronic mail addresses and saves those addresses in memory or disk storage. Presently, the electronic mailing protocol dictates that a filtering algorithm be used as follows: extract any string of characters that fits "space"_*@*.*_"space" where "*" is a wildcard variable representing any combination of characters.

Collections of addresses may be stored in separate electronic storage files for repeated retrieval at later times.

Since the collected addresses are extracted from sites and postings containing the specified keywords or Boolean combinations, it is reasonable to predict that a consequential number of those addresses will belong to individuals with experiences, interests, capabilities,

Installed commercially available electronic mailing computer software enables the operator to instruct the machine to deliver a specific job opportunity advertising message to each address collected into a specific file. The operator types the copy into the machine keyboard interface and then instructs the machine to send the message to a specific collection of addresses at a specified time.

There are reasons why the operator of the Candidate Chaser machine might want to filter responses before received by the client. First, a significant percentage of the response is error messages due to the fact electronic mail addresses are terminated often without forwarding instructions. Second, a percentage of responses are requests to be removed from future mailings. Third, a significant percentage of messages are "thanks but no thanks but keep me notified of other stuff" responses. Fourth, a percentage of responses are

In order to filter responses before they are directed to the client's electronic mail address the following procedure is used: A domain name is registered with InterNIC and the IP address location of a virtual mail server is designated. The virtual mail server is programmed to deliver all mail to one user logon at a specified POP3 channel. A single "Virtual Mail Server" (VMS) can be maintained on an Internet Service Provider (ISP) host for each Candidate Chaser machine or on a private server. The VMS is designated by a domain name registered with Internic, for example "abcd123.com". Candidate Chaser clients are assigned Mail Accounts to the domain by the Candidate Chaser machine operator, for example 1001@abcd123.com. A Master User Name (MUN) for the domain on the VMS, for example smr@abcd123.com, programmed to download all mail received into the account no matter what the prefix, is programmed into the server. Electronic mail messages to potential candidates contain the client's assigned VMS mail account in the "Reply" field so that responses are directed to the domain and received into the virtual mail server's storage. Consequently, the "To;" field in the response message contains the client's mailing account address at the Candidate Chaser virtual mail server domain. Mail, directed to different clients based on the address in the "To:" field, is downloaded from the VMS in a single COMBINED batch using the mail computer software program to accessing the MUN account. The mail program filters and redirects the electronic mail message based on the filters and filter actions listed in the paragraphs that follow.

Messages containing resumes and curriculum vitae are forwarded to a designated resume collection electronic mail address. Any messages that were not forwarded to the remove site or deleted for non-delivery are forwarded to the client's personal mail address at their mail server, for example: sally@aol.com. Mail that doesn't match any filter is forwarded to the quality control staffs' mail address so they can inspect it and determine whether filters need adjustment.

1. Checking Mail option = leave mail on server (Mail will be removed from server by filter actions only.)
2. Every filter is programmed to execute on "incoming" mail only.

2.1. Filters

2.1.1. Removes to Chase101

2.1.1.1. Subject contains "remove" or "spam" action equals make subject "Remove" then action equals redirect to chase101@domain.com then server option equals "delete" then action equals "Skip Rest".

2.1.1.2. Subject contains "unsubscribe" or "junk" action equals make subject "Remove" then action equals redirect to chase101@domain.com then server option equals "delete" then action equals "Skip Rest".

2.1.1.3. Subject contains "garbage" or "trash" action equals make subject "Remove" then action equals redirect to chase101@domain.com then server option equals "delete" then action equals "Skip Rest".

2.1.1.4. Body contains "remove" or "spam" action equals make subject "Remove" then action equals redirect to chase101@domain.com then server option equals "delete" then action equals "Skip Rest".

2.1.1.5. Body contains "garbage" or "trash" action equals make subject "Remove" then action equals redirect to chase101@domain.com then server option equals "delete" then action equals "Skip Rest".

2.1.2. Undeliverables Deleted

2.1.2.1. Subject contains "deliver" or "error" then action equals server option "delete" then "Skip Rest"

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2.1.2.3. Subject contains "illegal" or "fail" then action
equals server option "delete" then "Skip Rest"
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2.1.3.1. Subject contains "resume" or "vitae" then action equals redirect to resume@domain.com

2.1.4. Forward to customer everything not deleted and matching their address

2.1.5. Forward non filtered items to Quality Control Person - Theoretically nothing should be available to filter and forward to the Quality Control Function at this point unless there is a filter programming oversight.

2.1.5.1. To "appears" then redirect to gc@qcdomaine.com then server option equals delete and "Skip Rest"

Each Candidate Chaser machine is designated its own Master User Name at a Virtual Mail Server where a domain name specific to each machine is registered, for example "abcd123.com". ALL mail sent to any

The ISP that provides the Virtual Mail Server is not necessarily the provider of dial-up access to the server. Therefore, one might dial-up the internet using one ISP such as Netcom to get onto the Internet Backbone and then access the Virtual Mailserver at a different ISP. The DNS settings in the dial-up program (usually entered in the TCP/IP settings of the dial-up) can be from one ISP while the POP3 settings can be from another.

Conclusion, Ramifications, and Scope

Accordingly, the reader will see that the Candidate Chaser Machine and Process automatically locates Internet site pages and web postings which contain operator specified keywords or Boolean combinations and then extracts all email addresses from those pages as well as linked pages to as many linking levels as selected by the operator and then sends a job opportunity description enclosed in an electronic mail message to each of the extracted addresses then receives responses from recipients of the job opportunity message then filters those messages by reading their text and forwards only desirable responses to the candidate seeking client's electronic mail address thusly sparing the client interaction with large amounts of irrelevant response while presenting viable candidates for a given job opening.

The Candidate Chaser process does not use a static database as its source of addresses but instead takes advantage of the dynamic properties of the Internet where new information is added every minute.

Job opportunity announcements are communicated to potential candidates within hours of submission[Ⓢ]

Candidate Chaser job opportunity advertisements are delivered directly to the worker's email box therefore she/he is not required to search for applicable job offerings.

Workers view the Candidate Chaser job opportunity advertisement by choice at their convenience any time night or day since the advertisement arrives and resides in the email message box until they take an action or their software automatically discards it based on their previously set filters.

The scope of this invention is limited to operating the combination of types of computer hardware, types of telecommunication hardware, and types of computer software programs and their operation in a

specified manner as described herein consistent with achieving the objectives of the process set forth herein. Although the description above contains many specificities, these should not be construed as limiting the scope of invention but as merely providing illustrations of the presently preferred embodiments of this invention. For example, the search for web sites containing operator specified keywords may be executed using computer software programs not yet designed, created or available instead of the computer software program listed in the description.

Thus the scope of the invention should be determined by the appended claims and their legal equivalents, rather than by the examples given.

To clarify, note that in the appended claims I use the terms "a" and "an" to mean at least one, and "web page" to include web pages and Internet pages, as well as internet postings such as postings to internet chat rooms.